

BIENNIAL STRATEGY REVIEW SYSTEM

Chesapeake Bay Program



Logic and Action Plan: Post-Quarterly Progress Meeting

[Student Outcome] – [2021-2022]

Long-term Target: Continually increase students' age-appropriate understanding of the watershed through participation in teacher-supported, meaningful watershed educational experiences and rigorous, inquiry-based instruction, with a target of at least one meaningful watershed educational experience in elementary, middle and high school depending on available resources.

Two-year Target: Not established.

Factor	Current Efforts	Gap	Actions	Metrics	Expected Response and Application	Learn/Adapt
<i>What is impacting our ability to achieve our outcome?</i>	<i>What current efforts are addressing this factor?</i>	<i>What further efforts or information are needed to fully address this factor?</i>	<i>What actions are essential (to help fill this gap) to achieve our outcome?</i>	<i>What will we measure or observe to determine progress in filling identified gap?</i>	<i>How and when do we expect these actions to address the identified gap? How might that affect our work going forward?</i>	<i>What did we learn from taking this action? How will this lesson impact our work?</i>
State Education Agency Leadership for Environmental Literacy	Continuing efforts to gain support for an education-focused PSC agenda at least once every two years. Encouraging both high level support within state education agencies and maintaining adequate staffing to drive MWEE implementation	High level engagement from state DOEs	3.1, 3.3 See also Environmental Literacy Planning	No	On-going maintenance of partnerships. Turnover in these positions would require increased effort.	

Legislation and Policy	MD graduation requirement; DC Healthy Schools Act; ELIT survey	In some states there are no state-level policy drivers (WV, NY, DE)	See Environmental Literacy Planning	No	On-going and incremental but sharing across states will be critical to move work forward.	
Local Education Agency Implementation of MWEEs (with partners)	Use ELIT to track MWEEs and other environmental literacy needs	Urgency at the school district level to conduct MWEEs; Accountability measures; Supportive policies	3.1, 3.2, 3.3 See also Environmental Literacy Planning	Yes. ELIT survey collects data and demonstrates self-reporting of where MWEEs are occurring.	ELIT survey results come in every other year. Districts that demonstrate one MWEE in each grade-band on the ELIT survey will serve as models for others.	
Education Reform/Curriculum Alignment	Work with states and school districts to integrate MWEEs into curriculum to reduce perceived burden	Understanding that MWEEs are not add-ons	1.1, 1.2, 1.3, 1.4, 2.1, 2.2	Yes. ELIT tracks districts that have MWEEs integrated into curriculum	ELIT survey results come in every other year. Districts that demonstrate sustainability with one MWEE embedded into the curriculum in each grade-band on the ELIT survey will serve as models for others. Funding will be allocated to different geographies.	
Funding/Staffing	Pursue private and innovative funding sources.	Adequate funding for teacher training, transportation and action projects. Also, capacity building of school districts and their partners in some regions.	See Environmental Literacy Planning	No	Diversified funding will enable current funds to be leveraged for increased impact and sustainability. Innovative funding will enable a focus on under-resourced districts.	
School community (teachers,	Train-the- trainer model using the Facilitator's Guide	Principals (administrators)	1.1, 1.3, 1.4, 2.1, 2.2, 2.3, 3.2, 3.3, See	No	School district-by-school district basis.	

principals, staff) awareness and readiness	to ensure effective professional development of teachers who can design more and better MWEEs; Promote online training and maintain resources on Bay Backpack	need to encourage MWEEs and support teachers/staff in receiving training. Facilitators of MWEE training need to be well-versed in MWEE approach and best practices.	Environmental Literacy Planning		Sustainability and long-term support for professional development should be built into Environmental Literacy Plans.	
State agency and partner coordination	Ensure that there are staff to drive MWEE development and implementation; Maintain interagency state workgroups	Enhanced collaboration; sharing of best practices across states and partners	1.1, 1.4, 2.1, 2.2, 3.2, See also Environmental Literacy Planning	No	Through regular convenings and the development of local environmental literacy networks like the Outdoor Learning Network Initiative (OLNI) and the Regional Outdoor Learning Network (ROLN).	
COVID-19 impacts on education	Support for facilitators in providing virtual MWEE professional development; promoting examples of virtual opportunities for MWEEs; sharing resources for schooling from home.	Local Education Agency (LEA) support for outdoor learning during COVID, including policies that both enable and encourage outdoor education.	1.1, 1.3, 2.3, 3.1, 3.2	No	On-going, as school districts adopt policies or practices; they should be held up as case studies.	

ACTIONS – [2021-2022]

Action #	Description	Performance Target(s)	Responsible Party (or Parties)	Geographic Location	Expected Timeline
Management Approach 1: Increase and improve resources for educators (pre-service, teachers, and non-formal) to support the development and implementation of Meaningful Watershed Educational Experiences (MWEEs).					
1.1	Expand the online MWEE training hub on Bay Backpack to include resources, regional and state-specific training modules and information about in-person training opportunities.	Collect and highlight a series of exemplary MWEEs, Environmental Literacy Models (ELMs) and related content on Bay Backpack	NOAA, with support from the CBP Communications Office	Regional	On-going, first round compiled by Spring 2021
		Use the Bay Backpack social media to promote content on the site to educators and teachers, including training opportunities.	CBP	Regional	On-going
		Develop google forms to solicit consistent content for various areas of Bay Backpack (lessons/activities; field sites; action projects; MWEE examples; training opportunities; etc.) that include a rubric for assessing quality of lessons/activities that can be used by each state.	CBP	Regional	Spring 2021
		Develop a guidance document with tools and resources for educators to evaluate MWEEs.	NOAA/Consultant	Regional	Winter 2020
		Complete a full audit (QA/QC) of existing resources on Bay Backpack to ensure that all content is up-to-date, supportive of current state standards, and includes culturally responsive teaching and learning resources.	CBP	Regional	Winter 2020
		Twice per year, solicit content for Bay Backpack (including lessons/activities; field sites; action projects; training opportunities). Use a rubric to assess resources and have CBP post quality	VA (VA CBP Workgroup); DE (DE Watershed Group); WV (WV	VA, DE, WV, PA	December and June, annually

		content on Bay Backpack.	OLNI); PA (PA PDE, DCNR, DEP, Stroud, CBF)		
		Compile and share Environmental Literacy Models and MWEEs developed through grant funded programs that work with teachers and entire districts, including examples that are multidisciplinary and that incorporate climate change.	MD (PGC); PA (PA PDE, CBF, Stroud)	MD	basic by Dec2021, add to it ongoing through Dec 2022
		Develop WV-specific MWEE emphasizing hands-on student-lead schoolyard watershed conservation	WV Outdoor Learning Network Initiative (OLNI)	WV	Dec. 2021
		Coordinate among partners to develop and share widely an accessible listing of EE providers and available professional learning opportunities that feature MWEEs and best practices.	MD Project Green Classrooms (PGC)	MD	basic by Dec 2021, add to it ongoing through Dec 2022
1.2	Promote the inclusion of environmental literacy instruction in college-level courses, teacher prep programs, and professional certification programs.	Support NOAA B-WET Pre-Service Capacity Building project in VA and promote best practices across the watershed, including through a session at the Environmental Literacy Forum.	NOAA	VA	Winter 2022
		Determine the feasibility of promoting environmental literacy requirements in natural resources professional certifications (ISAL)	CBP	Regional	Winter 2022
		Conduct a review of college and university education programs for inclusion of instruction in conducting systemic field investigations using the school grounds, the community, and regional resources as outlined in 8VAC20-543 of Virginia Code.	VDOE	VA	Winter 2021
		Meet annually with college and university science educators to promote the instruction of	VDOE	VA	Annually

		field experiences aligned to the Virginia Standards of Learning.			
		Complete the VAEE EE Certification Program design, which includes MWEE 101, and promote it to environmental educators when completed.	VAEE	VA	Fall 2021
		Convene Higher Education Institutions faculty, K-12 educators and environmental education partners regularly to coordinate on environmental literacy best practices.	MD PGC	MD	Dec 2021
		Develop guidance that aligns with the MD Environmental Literacy Standards, for consistency among Higher Education Institutions on course components that include teacher preparation in environmental literacy content and pedagogy.	MD PGC	MD	Dec 2022
		Engage pre-service programs to determine how they can provide environmental education as part of their coursework (such as teaching methods) with a target of 6 contact hours of training in environmental education	DC (OSSE); PA (PDE)	DC, PA	Dec 2022
		Communicate professional development opportunities for pre-service teachers through Teaching Green, Science Matters, SAS EE, & Ag, and Science newsletters, and other STEM communication channels.	PA (PDE, DEP); DE (DDOE)	PA, DE	Ongoing
		Design and implement PD sessions to fill environmental literacy, methodology and pedagogical gaps within Teacher Preparation and Educational Leadership programs for preservice teachers and school administrator certification programs. Use NOAA ELit and PA	PDE, IU 13	PA	Ongoing

		Env Ed Capacity surveys to inform design. (Complements 1.3 actions)			
		Iteratively update the PAEE EE certification program for non-formal educators to support sound methodology and programming that is supportive of MWEEs. Maintain ongoing enrollment and review process.	PAEE, DCNR, DEP, PDE	PA	Ongoing
		Create and share an alignment resource around andragogy (adult learner theory) and MWEE professional development to increase the likelihood for integrating content and approaches into university curriculum.	MD and VA Sea Grant	VA, MD	May 2021
1.3	Support educators in adapting their practice to integrate MWEEs (in-person, blended, and virtual contexts) through professional development	Compile and share best practices around student engagement in virtual programming including accessibility (Universal Design in Learning).	NOAA	Regional	Spring 2021
		Promote and deliver high quality professional development (including virtual professional development) that is supportive of state standards and models effective use of virtual resources.	VA (VDOE); DE (DDOE and DE Watershed Group); PA (PDE, DEP, DCNR, Stroud Water Research Center (SWRC)); DC (OSSE)	VA, DE, PA, DC	Ongoing
		Provide K-6 Educators with Science Inquiry at Home and Science Instructional Plans, instructional support documents that include environmental literacy components to support outdoor learning experience both at home and in a blended learning environment.	VA (VDOE); DE (DDOE and DE Watershed Group)	VA, DE	Ongoing

		Develop a 3-tiered, hybridized MWEE Professional Development and Instructional Model series for formal and non-formal educators that provides pedagogical support	PDE, DEP, DCNR, Stroud Center	PA	Ongoing
		materials to help teachers move along the spectrum from in-person to fully digital. Disseminate through professional development hosted by the NOAA Environmental Literacy Capacity Building Task Force and other state and regional partners.			
		Collaborate with PA CTE, Pa AG and FFA, PDE School Services (e.g. Migrant Ed, Refuge, and 21st Century programs) to provide professional development and resource support to include MWEEs and Environmental Education in education offerings. These programs include school time, after school, and summer programs.	PDE, PDA, Watershed Education Training Institute (WETI) at Millersville	PA	Ongoing
		Develop a PA-focused "Watershed Literacy Resources and Activity", including online supports for classroom, hybrid, and digital MWEE exploration at multiple grade bands	PA PDE, DCNR, DEP, SWRC, CBF	PA	January 2022
		Maintain, update and revise all components of Pennsylvania's Virtual Professional Learning Community (Standards Aligned System web page) for formal and nonformal, expand to include agriculture education as well as Environment & Ecology lessons, resources, etc.	PDE	PA	Ongoing
		Expand dissemination of WV environmental literacy training for teachers (making explicit MWEE connections) including WVDEP YEP! (Youth Environmental Program), Project Learning Tree, Project WET, Project WILD.	WV	WV OLNI	Dec 2021

		Provide funding opportunities for environmental educators to support teacher professional development and technical assistance for incorporating remote learning options.	MD PGC	MD	Dec 2021
1.4	Create state specific approaches and marketing strategies to provide outreach to teachers about the benefits and resources associated with MWEEs.	Collect and share this information across states through incorporation of resources on Bay Backpack	CBP	Regional	Ongoing
		Develop exemplar MWEE performance assessments aligned to Virginia Science Standards of Learning for 4th, 6th, Earth Science, Environmental Science, and/or Biology courses. Promote these performance assessments to both formal and nonformal educators using asynchronous and synchronous communication platforms.	VDOE	VA	Ongoing
		Share information about the benefits and resources associated with MWEEs through a variety of professional groups and convenings, such as (MD: MAST, MCSS, SHAPE Maryland, MCTELA, MCTA, MAEOE, and state content area supervisors’ meetings); (VA: VAST, VSELA, VAAE, NSTA, NAAEE, MAMEA)	MD (PGC); VA (VRUEC)	MD, VA	Ongoing
		Develop outreach strategy for teachers to include materials (such as environmental literacy guides and fact sheets) and events (such as teacher’s night). Use the Stroud Equity Tool to guide outreach strategy as needed.	DC (OSSE); DE (Watershed Group); PA (DEP, PDE, Stroud Center)	DC, DE, PA	2022
Management Approach 2: Support facilitators in developing effective MWEE professional development for educators (pre-service, teachers, and non-formal).					

2.1	Increase the number of professional development opportunities offered by trained facilitators that include the MWEE as an inquiry-based instructional model that encourages interdisciplinary investigations.	Work with a graphic designer to put together a template for the Facilitators Guide to MWEE Training; Create page(s) on Bay Backpack to house each of the state versions of the Facilitators Guide and associated resources.	CBP	Regional	Summer 2021
		Train facilitators in the MWEE model, including the use of Environmental Literacy Model (ELM) to develop curriculum-embedded MWEEs	CBP	Regional	Ongoing
		Host the Environmental Literacy Forum to convene partners across the watershed	CBP	Regional	Jan 2022
		Utilize guidance materials developed to help more partners include the MWEE as an inquiry-based instructional model in more professional learning opportunities that are offered through continuing education courses for teachers; graduate credit courses, MSDE CPD credit, etc.	MD PGC	MD	Dec 2022
		Convene education community members to determine needs and opportunities to engage more participants in professional learning focused on increasing teachers' comfort teaching outdoors; work with partners to address needs and increase professional development that encourages using public lands.	MD PGC	MD	Dec 2022
		Promote the use of the MWEE tools (MWEE Guide and Facilitator's Guide to MWEE Training) among partners throughout the state to improve consistency in implementing MWEEs.	MD PGC	MD	Dec 2021
		Develop PA Facilitator's Guide for MWEE Training and execute facilitator training program.	PA PDE, DCNR, DEP, Stroud Water Research Center, CFB	PA	Summer 2021

		Develop the DE Facilitator's Guide for MWEE Training with a group of core partners representing both formal and nonformal education.	DE Sea Grant	DE	June-Aug. 2021
		Develop a facilitator training/capacity network that includes PA STEM Ecosystems, PA BSP EE team, PA Conservation District education and outreach staff (including Envirothon	PA PDE, DCNR, DEP, Stroud Water Research Center, CFB	PA	Dec 2021
		Coordinators), PA Library System, PSU Extension educators. Connect to PA Facilitators Guide development to ensure QA/QC.			
		Encourage PA MWEE Ambassadors to mentor new formal or non-formal organizations through direct outreach and recruitment.	PDE	PA	Ongoing
		Host a train-the-trainer 1-day professional development using the VA Facilitator's Guide to MWEE Training in tangent with the 2022 VAEE Conference	Virginia Resource-Use Education Council (VRUEC)	VA	Spring 2021
		Promote "MWEE Ambassador" program to informal educators through VRUEC and regional environmental teams.	Virginia Resource-Use Education Council (VRUEC)	VA	Ongoing
		Integrate MWEE professional development sessions, modeled after the Facilitator's Guide to MWEE Training, in the Mid-Atlantic Marine Education Association (MAMEA) regional and state mini-conferences.	VA, MD, DE Sea Grant	Regional	Ongoing
		Complete and implement recommendations from network analysis with Local Concepts to address gaps and opportunities for network development	CBP	Regional	Spring 2021
	Develop a community of practice that provides opportunities for	Encourage district representation for the national Superintendents Environmental Education Collaborative	CBF	Regional	Ongoing

2.2	practitioners to network and share best practices, marketing strategies, and resources for effective professional development and student MWEEs.	Convene active NOAA B-WET project leaders on a biannual basis to share project resources, best practices, challenges and success.	CBP	Regional	Summer 2021
		Convene MWEE practitioners through a webinar series September-May	CBP	Regional	Monthly
		Enhance collaboration and communication between state agencies, formal and nonformal educators and environmental organizations.	VRUEC	VA	Ongoing
		Facilitate local networking opportunities within the state to collect and share resources, best practices to deliver instruction in varied learning environments, training guides, etc. State partners will designate regions within the state, identify EE partners to coordinate the local networks, provide guidance for consistency among networks, and report back at state and regional levels.	MD PGC	MD	Dec 2021
		Provide ongoing support for communities of practice to collaborate and increase capacity and implement environmental literacy programs at schools.	OSSE	DC	Dec 2022
		Continue to build out the local network and community of practice within the WV OLN cohort	Cacapon, Experience Learning, Potomac Valley Audubon	WV	Ongoing
		Continue to build out the local network and community of practice within the PA OLN cohort	Stroud	PA	Ongoing
		Engage WV Science Teacher Association and regional environmental literacy providers in expanding MWEEs.	Cacapon, Experience Learning, Potomac Valley Audubon	WV	Dec 2021

		Continue to build the PA Task Force and environmental literacy network in PA through hosting regular meetings	PA	PA	Ongoing
		Engage with NAAEE NOAA Watershed STEM Learning grantees by sharing resources, lessons learned, and identifying opportunities for future collaboration and networking	PDE	PA	Ongoing
2.3	Support facilitators in adapting their MWEE workshops and trainings to blended and virtual formats.	Develop and implement a survey assessing the education community’s perception of virtual learning opportunities	CBP	Regional	Fall 2020
		Compile and share best practices and recommendations around professional development in blended and virtual programming including accessibility.	CBP	Regional	Spring 2021
		Promote and share virtual training that is accessible to facilitators (MWEE 101 and MWEE 201), including an addendum to the Facilitator's Guide that provides suggestions around virtual/blended training.	CBP	Regional	Spring 2021
		Facilitate local networking opportunities within the state to collect and share resources, best practices to deliver instruction in varied learning environments, facilitation / training guides, etc.	VA (VRUEC); MD (PGC); PA (PDE, PAEE)	VA, MD, PA	Ongoing
Management Approach 3: Increase school, district, and regional administrator professional development with the goal of increasing direct engagement needed to support the use of MWEE as an educational best practice to build and reinforce core content understanding.					
	Create resources that showcase	Identify key policy initiatives at the state level and develop outlines and trainings to align MWEE to those policies	CBP	Regional	Dec 2022

3.1	the importance of MWEE and connect them to existing educational initiatives (e.g. Next Generation Science Standards, Project Based Learning, Workforce Development, STEM [Science, Technology, Engineering, and Math], etc.) as well as key policy initiatives (e.g. Every Student Succeeds Act, U.S. DOE Green Ribbon Schools, etc.).	Use the network analysis to determine priority organizations for sharing the value of tactile hands-on environmental literacy that aligns with their fields of interest.	CBP	Regional	Spring 2021
		Compile a concise set of pertinent research related to MWEEs and 21st Century Skills, college & career readiness, VA 5 C's, academic achievement, and other state priorities.	VA (CBP Workgroup Members); MD (PGC); PA (PDE)	VA, MD, PA	December 2022
		Engage professional and practice groups such as, PA IU system, PA STEM Ecosystems, Ag Ed (e.g. PAAE), Environmental Justice Advisory	PDE	PA	Ongoing
		Board, School Support Services groups (e.g. Migrant & Refugee ED, and 21st Century Programs through PD that demonstrates utilization of MWEE and ELM as a tool to promote inclusive problem-based learning practices that address statewide initiatives.			
		Showcase MWEE examples in newsletters and other communication channels. "Teaching Green," Science Matters, SAS Learning Communities, Pennsylvania STEM Coalition, State Systems of Supports Workgroups.	PA	PA	Ongoing
		Organize network resources by theme (e.g. MWEE component, curricular connection, audience expansion, research supports, etc.); may also include white papers, literature reviews, research summaries.	PA ELIT Capacity Building Leadership Team	PA	Ongoing
		Create a set of promotional materials for MWEE Ambassadors to use in outreach to school, district, and regional administrators that includes analyses that demonstrate impacts of MWEE on student learning	NOAA	Regional	Fall 2021

3.2	Create state specific approaches to provide outreach to districts and principals about the benefits and resources associated with MWEEs.	Distribute resources created in action 3.1 through appropriate channels such as VAST, VDOE Superintendent's Memos, VSELA, etc. Leverage existing non-formal/formal partnerships and networks to amplify the message.	VDOE, VAEE	VA	Ongoing
		Create marketing materials, using ELIT data collected under Planning 2.1 to share with district administrators to highlight accomplishments, determine needs and/or cultivate partnerships.	MD PGC	MD	Dec 2022
		Offer administrator professional opportunities to learn about the EE literacy plan, what MWEEs are, and how EE relates to improving overall testing scores.	DDOE and Watershed Group	DE	Ongoing
		Develop and administer PA Administrator/leadership level training (ACT 45) that incorporates Environmental Literacy Plan Development and highlights benefits of systemic MWEE integration.	PDE, DCNR, CBF, SWRC, IU 13	PA	Summer 2021
		Develop and offer professional development programs which support environmental literacy plan development and implementation. Encourage partnering of non-formal educators to provide outside support for teachers and administrators opportunity to develop community- wide, systemic, interdisciplinary programs.	PDE, DCNR, CBF, SWRC, Intermediate unit 13, Fairmount Waterworks	PA	Summer 2021
		Continue to present at conferences and organizational meetings such as PAIU, PA Association of School Business Officials (PASBO), Regional ASTE, NARST, AERA.	PA ELIT Capacity Building Grant Leadership Team	PA	Ongoing

3.3	Continue to develop MWEE Ambassadors among administrators at the school, district, and regional levels through broadened stakeholder involvement.	Develop a strategy for engaging with Superintendents and/or principals (e.g. Principal Academies, presenting at Association of Superintendents conferences, etc.)	PA ELIT Capacity Building Task Force	PA	Fall 2021
		Share resources around network development and other key materials from PA OLNi with statewide network to inform and recruit additional school districts.	Conestoga Valley School District	PA	Summer 2021
		Maintain and improve environmental education awards programs, such as PA MWEE and Pathways to Green Schools (US DOE Green Ribbon School Program) to maintain visibility	PDE, DEP, DCNR	PA	Ongoing
		and excitement of MWEE related programming.			
		Develop and facilitate an administrator and facility manager level networking partnership with the teacher/ambassador/facilitator program to provide supports for educational leadership to share experiences; include PAIU partners process.	PDE, PA Association of School Business Officials (PASBO), PAIU, DEP	PA	June 2022
		Submit presentation proposals about the value of MWEEs to the Virginia Association of Supervision and Curriculum Development annual meeting	VRUEC	VA	Ongoing
		Facilitate opportunities for MWEE-based field experiences for administrators and associated exchanges of successful models, ideas, and best practices to include ELit across disciplines in the curriculum. Involve EE partners to increase awareness and ignite partnerships.	MD PGC	MD	Dec 2022
		Engage superintendents and school boards in adoption of formal MWEE plans & goals including recognition awards for schools, teachers, and students.	Cacapon Institute, Experience Learning	WV OLNi	Dec. 2021

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